Original subject.

THE INCUBATION OF ELECTRONIC IMAGING

LET THE FUN BEGIN

Video camera on live subject. Cromemco Z-80 computer was used for background. Program used: Strobe 64 assisted in background build up, producing the original image 16 times in small frames. The video camera image was sandwiched with background computer information. Jones Colorizer was used for added color.

Low-cost computer graphics systems will soon be available. LAURENCE M. GARTEL

Even though computer-driven apparatus has been around since the 1950's, it is only now that we are conscious of computer "everything." Technology is developing at such increasing velocity that it is making tools of just a few days ago outmoded. Information is being transferred more swiftly and skillfully than ever before.

Laurence M. Gartel is a free-lance photographer specializing in video-computer graphics. His work has appeared in many publications, including Art Direction and Popular Photography magazines. His work has been exhibited at the Video Art Festivals in Locarno, Switzerland, the University of Oklahoma and the Museum of Modern Art. He wrote "The Electronic Imaging Machine" for our September 1981 issue.

The computer is the potential tool for generating any sort of art image, in any style (painterly, watercolor, lithographic, silk-screen or photographic). We shall see the growth of the electronic image when programmers have an open channel with artists working in the medium. A programmer knows the direct approach for achieving special effects. The artist's role is one of an orchestra leader; he does not necessarily have to understand the mechanics of each instrument, but he has to have the intuitive vision of knowing what he would like to see as an end product. The more technology an artist understands the better the composition.

It is vital that the research and development teams of hardware and software manufacturers create products that can be readily understood by those who would use them. It will be the imagination of the creative person that will make the technology thrive.

Then it will be only a matter of time before we can expect to see the costs of computer time decreasing.

One place where art and technology synthesize creative pursuits is the Experimental Television Center in Oswego, New York. Through grants from the New York State Council on the Arts, the National Endowment for the Arts, and private funding, independent programmers work directly with artists, modifying inexpensive systems into workable video tools. The director, Ralph Hocking, has contributed much of the equipment he has developed to the Center's television studio. Individuals who are enrolled in master's degree programs at the Department of Cinematography/State University of Binghamton are working on accredited independent projects in conjunction with the Center. They build hardware and write software, which is then added to the Center's files. This also applies to

developing electronic tools used for the purpose of creating work. There are approximately a half dozen people who own their own systems. Unlike systems bought off the shelves, they are highly personalized and were each built for under $10,000.

The Experimental Television Center has recently added a Cromemco Z-80 computer to its repertoire of electronic gadgetry. It utilizes floppy discs to record and retrieve information. The CAT-100, a frame-store system from Digital Graphics Systems, is also widely used at the center. Together, the frame buffer and the computer cost approximately $7,000.

Another special unit devised to work with the computer is the Black Box. This is a digital-analog interface. It takes an analog signal, turns it to digital and goes out as analog. This allows production of computer effects through the box, mixing them with video special effects, such as the Paik-Abe Synthesizer or the Jones Colorizing Unit. A keyboard is only used to type the name of the programs being employed. Once a program is assigned, the Black Box simply works with a set of switches. There are no knobs to turn.

The excitement here is the potential of the camera image. It is the camera that defines what the image is and adds the possibilities of control. In recent times, we have seen the awakening of over a dozen palette paint systems (*Photomethods*, September 1981) where the operator draws with a joystick or stylus upon a digitizing tablet. Here the camera image starts with reality. The developed image comes from the imagination.

The Experimental Television Center is not concerned with marketing their projects. Their time is involved in research and development of video and computer interfaces; building enough circuitry to connect workable systems. They are solely interested in the integrity of expanding the visual arts. Three-day residencies are granted to individual artists who have written proposals requesting time at the Center. All endeavors are treated as the promotion of fine art. This is not to say that a successful piece of work, be it a videotape or a piece of electronic music, cannot be successful in the commercial market. It is all a matter of how earnestly a work started.

At big commercial studios, such as Devlin in New York, you can rent time-sharing on a Quantel system, and the cost is quite high. The commercial studio has a lot of sophisticated equipment costing anywhere from $100,000 to a few million. Their investment costs must be passed onto the user, at a cost of about $250 or more an hour. Advertising agencies are about the only ones that can afford any significant time on these systems. The Experimental Television Center and its participants endorse low-cost format tools to acquire similar effects.

When technology is within the reach of a broader range of participants, we will all be able to build our own systems for our personalized needs. We will also be able to interface with the computer external machines such as telephones, audiotape recorders, and video cameras and recorders. Low-cost systems will be available soon. The fun has yet to begin. ●

Video camera directed on live object. Frequency level was adjusted very high. Voltage level of camera was not able to hold onto the signal as it scanned the image.

Video camera on live object (same as left). Brightness control was turned high. Video level was up to modulate high frequency. A Paik-Abe synthesizer was used for subtle color manipulation.

Video camera on live object. Rich color saturation was added by the Jones Colorizer. Black level or brightness was turned down to achieve both high and low ends of the gray scale.

Video camera on live subject (same as left). Second video camera was used to create background. Special effects generator turned background colors into negative. The Paik-Abe synthesizer was used to alter background colors. Shoes and foreground colors were changed by the Jones Colorizer.